

A. Daniel Kelley

PROFESSIONAL EXPERIENCE

Senior Vice President, HAI Consulting, Inc., Boulder Colorado

Conducting economic and applied policy analysis of domestic and international telecommunications issues. Recent assignments include investigation of broadband competition and interconnection, antitrust analysis of local telephone company mergers, and costing and interconnection studies in various countries. Other assignments have included analysis of wireless competition, the economics of cable television regulation, analysis of the prospects for local telephone competition, and measuring the economic cost of local service.

Director of Regulatory Policy, MCI Communications Corporation, 1984-1990.

Responsible for developing and implementing MCI's public policy positions on issues such as dominant carrier regulation, Open Network Architecture, accounting separations and Bell Operating Company line of business restrictions. Also managed an interdisciplinary group of economists, engineers and lawyers engaged in analyzing AT&T and local telephone company tariffs.

Senior Economist and Project Manager, ICF Incorporated, 1982-1984.

Telecommunications and antitrust projects included: forecasting long distance telephone rates; analysis of the competitive effects of AT&T's long distance rate structures; a study of optimal firm size for cellular radio markets; analysis of the FCC's Financial Interest and Syndication Rules, and competitive analysis of mergers and acquisitions in a variety of industries.

Senior Economist, Federal Communications Commission, 1979-1982.

Served as Special Assistant to the Chairman during 1980-1981. Advised the Chairman on proposed regulatory changes in the broadcasting, cable television and telephone industries; analyzed legislation and drafted congressional testimony. Coordinated Bureau and Office efforts on major common carrier matters such as the Second Computer Inquiry and the Competitive Carrier Rule-making. Also held Senior Economist positions in the Office of Plans and Policy and the Common Carrier Bureau.

Staff Economist, U.S. Department of Justice, 1972-1979.

Analyzed proposals for restructuring the Bell System as a member of the economic staff of U.S. v. AT&T; investigated the competitive effects of mergers and business practices in a wide variety of industries.

EDUCATION

1976	Ph.D. in Economics	University of Oregon
1971	M.A. in Economics	University of Oregon
1969	B.A. in Economics	University of Colorado

PAPERS AND COMPLETED RESEARCH

Telephone Company Antitrust and Regulation: Lessons for the Microsoft Remedy, http://itp.colorado.edu/silicon_flatirons, September 4, 2001

"New Zealand Telecommunications: The State of Competition" (1998), with Todd Telecommunications Consortium.

"Cable and Wireless Alternatives to Residential Local Exchange Service," Berkeley Conference on Convergence and Digital Technology (1997), with Alan J. Boyer and David M. Nugent.

"A General Approach to Local Exchange Carrier Pricing and Interconnection Issues," Telecommunications Policy Research Conference, Solomons, Md., (1992).

"Gigabit Networks: Is Access a Problem?" IEEE Gigabit Networking Workshop (1992).

"Advances in Network Technology" in Barry Cole, ed., After the Break-Up: Assessing the New Post-AT&T Divestiture Era (1991).

"Alternatives to Rate of Return Regulation: Deregulation or Reform?" in Alternatives to Rate Base Regulation in the Telecommunications Industry, NARUC (1988).

"AT&T Optional Calling Plans: Promotional or Predatory" in Harry M. Trebing, ed., Impact of Deregulation and Market Forces on Public Utilities: The Future Role of Regulation (1985).

"The Economics of Copyright Controversies in Communications" in Vincent Mosco, ed., Policy Research in Telecommunications (1984).

"Deregulation After Divestiture: The Effect of the AT&T Settlement on Competition," FCC, OPP Working Paper No. 8 (1982).

"The Transition to Structural Telecommunications Regulation," in Harry M. Trebing, ed., New Challenges for the 1980's (1982), with Charles D. Ferris.

PAPERS AND COMPLETED RESEARCH (CONT'D)

"Social Objectives and Competition in Common Carrier Communications: Incompatible or Inseparable?" in Harry M. Trebing ed., Communications and Energy in Transition (1981), with Nina W. Cornell and Peter R. Greenhalgh.

"An Empirical Survey of Price Fixing Conspiracies," Journal of Law and Economics (1974), with George A. Hay. Reprinted in Siegfried and Calvari, ed., Economic Analysis and Antitrust Law (1978) and the Journal of Reprints for Antitrust Law and Economics (1980).

TESTIMONY BEFORE REGULATORY AGENCIES

Federal Communications Commission, Application of Cellular Communications of Cincinnati, July 25, 1983 (with Robert J. Reynolds): Optimum firm size in the cellular radio market.

Maryland Public Service Commission, Case No. 0450-Phase II, May 31, 1983: Access charge implementation issues.

New York Public Service Commission, Case No. 28425, June 1983: Access charge implementation issues.

Florida Public Service Commission, Docket No. 820537-TP, June 30, 1983, November 4, 1983, April 9, 1984, June 4, 1984, September 7, 1984, October 25, 1984 and August 15, 1985: Access charge implementation issues.

Pennsylvania Public Utility Commission, Docket No. R-832, August 5, 1983: Rate Case.

New Jersey Board of Public Utilities, Docket No. 83-11, February 20, 1984: Access Charge.

New York Public Service Commission, Case 88-C-102, March 2, 1990: Alternative Operator Service Issues.

California Public Service Commission, A.90-07-015, July 10, 1990: AT&T Deregulation.

New York Public Service Commission, Case 28425, October 8, 1990: IntraLATA Dial 1 Competition.

Massachusetts Department of Public Utilities, DPU 90-133, October 17, 1990: AT&T Deregulation.

TESTIMONY (CONT'D)

Georgia Public Service Commission, 3905-U, November 16, 1990: Incentive Regulation.

California Public Service Commission, I-87-11-033, September 23, 1991: IntraLATA Competition.

Georgia Public Service Commission, Docket No. 3987-U, January 31, 1992: Cross-Subsidy.

Colorado Public Utilities Commission, Docket No. 92R-050T, August 24, 1992: Collocation.

Connecticut Department of Public Utility Control, Docket No. 9106-10-06, September 25, 1992: Infrastructure.

Maryland Public Service Commission, Case No. 8584, Phase II, July 21, 1995: Local Competition.

Connecticut Department of Public Utility Control, Docket No. 95-06-17, September 8, 1995: Local Competition .

Federal-State Joint Board on Universal Service, CC Docket No. 96-45, June 5, 1996: Cost Modeling.

Colorado Public Utilities Commission, Docket No. 96A-287T, September 6, 1996: Arbitration.

Hawaii Public Utilities Commission, October 17, 1996: Arbitration.

Oregon Public Service Commission, Dockets ARB 3 & 6, September 6, 1996: Arbitration.

Michigan Public Service Commission, October 24, 1996: Arbitration.

New York Public Service Commission, Case No. 28425, May 9, 1997: Access Charges.

Colorado Public Utilities Commission, Docket No. 97F-175T, July 18, 1997: Access Charges.

Utah Public Service Commission, Docket No. 97-049-08, October 2, 1997: Access Charges.

TESTIMONY (CONT'D)

Connecticut Department of Public Utility Control, Docket No. 96-04-07, February 10, 1998: Access Charges.

Massachusetts Department of Public Utility Control, Docket No. 98-15, August 14, 1998: Wholesale Discount.

Connecticut Department of Public Utility Control, Docket No. 95-06-17RE02, August 3, 1999: Wholesale Discount.

Washington Utilities and Transportation Commission, Docket No. UT-991991, March 24, 2000: WCOM-Sprint Merger.

California Public Utilities commission, Application No. 9-12-012, April 14, 2000: WCOM-Sprint Merger.

Appendix C – Proposed Rule Modifications

APPENDIX C

PROPOSED RULES

(All proposed changes are italicized and bolded)

PART 101 – FIXED MICROWAVE SERVICES

§ 101.21 Technical content of applications.

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(e) Each application in the Private Operational Fixed Point-to-Point Microwave Service and the Common Carrier Fixed Point-to-Point Microwave Service must include the following information:

Applicant's name and address.

Transmitting station name.

Transmitting station coordinates.

Frequencies and polarizations to be added, changed or deleted.

Transmitting equipment, its stability, effective isotropic radiated power, emission designator, and type of modulation (digital).

Transmitting antenna(s), model, gain, and, if required, a radiation pattern provided or certified by the manufacturer.

Transmitting antenna center line height(s) above ground level and ground elevation above mean sea level.

Receiving station name.

Receiving station coordinates.

Receiving antenna(s), model, gain, and, if required, a radiation pattern provided or certified by the manufacturer.

Receiving antenna center line height(s) above ground level and ground elevation above mean sea level.

Path azimuth and distance.

Elevation (for an application for a license or licenses above 70 GHz).

NOTE: The position location of antenna sites shall be determined to an accuracy of no less than ± 1 second in the horizontal dimensions (latitude and longitude) and ± 1 meter in the vertical dimension (ground elevation) with respect to the National ***Spatial*** Reference System.

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§ 101.101 Frequency availability.

-----**RADIO SERVICE**-----

Frequency band (MHz)	Common Carrier (Part 101)	Private Radio (Part 101)	Broadcast Auxiliary (Part 74)	Other (Parts 15, 21, 22, 24, 25, 74, 78 & 100)	Notes
928-929	MAS	MAS		PRS	
932.0-932.5	MAS	MAS		PRS	
932.5-935.0	CC	OFS			(1)
941.0-941.5	MAS	MAS		PRS	
941.5-944.0	CC	OFS	Aural BAS		(1)
952-958		OFS/MAS		PRS	
958-960	MAS	OFS			
1850-1990		OFS		PCS	
2110-2130	CC			PET	
2130-2150		OFS		PET	
2150-2160		OFS		MDS	
2160-2180	CC			ET	
2180-2200		OFS		ET	
2450-2500	LTTS	OFS	TV BAS	ISM	F/M/TF
2650-2690		OFS		MDS/ITFS	
3700-4200	CC LTTS	OFS		SAT	
5925-6425	CC LTTS	OFS		SAT	
6425-6525	LTTS	OFS	TV BAS	CARS	M
6525-6875	CC	OFS			F/TF
10,550-10,680	CC DEMS	OFS, DEMS			
10,700-11,700	CC LTTS	OFS		SAT	
11,700-12,200	LTTS			SAT	
12,200-12,700		OFS		DBS	
12,700-13,250	CC LTTS	OFS	TV BAS	CARS	F/M/TF
14,200-14,400	LTTS			SAT	
17,700-18,300	CC	OFS	TV BAS	CARS	
18,300-18,580	CC	OFS	TV BAS	CARS SAT	
18,580-18,820	CC	OFS	Aural BAS	SAT	

Frequency band (MHz)	Common Carrier (Part 101)	Private Radio (Part 101)	Broadcast Auxiliary (Part 74)	Other (Parts 15, 21, 22, 24, 25, 74, 78 & 100)	Notes
18,820-18,920	DEMS	OFS DEMS		SAT	
18,920-19,160	CC	OFS	Aural BAS	SAT	
19,160-19,260	DEMS	OFS DEMS		SAT	
19,260-19,700	CC	OFS	TV BAS	CARS SAT	
21,200-23,600	CC LTTS	OFS			TF
24,250-25,250	CC	OFS			
27,500-28,350	LMDS	LMDS			
29,100-29,250	LMDS	LMDS		SAT	
31,000-31,300	CC LMDS LTTS	OFS LMDS			F/M/TF
38,600-40,000	CC	OFS	TV BAS		F/M/TF
71,000-76,000	CC	OFS			F
81,000-86,000	CC	OFS			F

BAS: Broadcast Auxiliary Service--(Part 74).

CARS: Cable Television Relay Service --(Part 78).

CC: Common Carrier Fixed Point-to-Point Microwave Service--(Part 101, Subparts C & I).

DBS: Direct Broadcast Satellite--(Part 100).

DEMS: Digital Electronic Message Service--(Part 101, Subpart G).

ISM: Industrial, Scientific & Medical--(Part 18).

ITFS: Instructional Television Fixed Service--(Part 74).

LTTS: Local Television Transmission Service--(Part 101, Subpart J).

MAS: Multipoint Address System--(Part 101).

MDS: Multipoint Distribution Service--(Part 21).

OFS: Private Operational Fixed Point-to-Point Microwave Service--(Part 101, Subparts C & H).

PCS: Personal Communications Service--(Part 24).

PET Emerging Technologies (per ET Dkt. No. 92-9, not yet assigned)

PRS Paging and Radiotelephone Service--(Part 22, Subpart E).

SAT: Fixed Satellite Service--(Part 25).

Notes:

F--Fixed.

M--Mobile.

TF--Temporary Fixed.

(1)--Applications for frequencies in the 932.5-935/941.5-944 MHz bands may be filed initially during a one-week period to be announced by public notice. After these applications have been processed, the Commission will announce by public notice a filing date for remaining frequencies. From this filing date forward, applications will be processed on a daily first-come, first-served basis.

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§ 101.103 Frequency coordination procedures.

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(ii) Notification must include relevant technical details of the proposal. At minimum, this should include, as applicable, the following:

Applicant's name and address.

Transmitting station name.

Transmitting station coordinates.

Frequencies and polarizations to be added, changed or deleted.

Transmitting equipment type, its stability, actual output power, emission designator, and type of modulation (loading).

Transmitting antenna type(s), model, gain and, if required, a radiation pattern provided or certified by the manufacturer.

Transmitting antenna center line height(s) above ground level and ground elevation above mean sea level.

Receiving station name.

Receiving station coordinates.

Receiving antenna type(s), model, gain, and, if required, a radiation pattern provided or certified by the manufacturer.

Receiving antenna center line height(s) above ground level and ground elevation above mean sea level.

Path azimuth and distance.

Elevation (for an application for a license or licenses above 70 GHz).

Estimated transmitter transmission line loss expressed in dB.

Estimated receiver transmission line loss expressed in dB.

For a system utilizing ATPC, maximum transmit power, coordinated transmit power, and nominal transmit power.

NOTE: The position location of antenna sites shall be determined to an accuracy of no less than ± 1 second in the horizontal dimensions (latitude and longitude) and ± 1 meter in the vertical dimension (ground elevation) with respect to the National ***Spatial*** Reference System.

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§101.107 Frequency tolerance.

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Frequency (MHz)	Frequency Tolerance (percent)		
	<u>All fixed and base stations</u>	<u>Mobile stations over 3 watts</u>	<u>Mobile stations 3 watts or less</u>
928 to 929 ^{2 5}	0.0005		
932 to 932.5 ^{2 5}	0.00015		
932.5 to 935 ²	0.00025		
941 to 941.5	0.00015		
941.5 to 944	0.00025		
952 to 960 ⁷			
944.0 to 1,000	0.0005	0.0005	0.0005
1,850 to 1,990	0.002		
2,110 to 2,200	0.001		
2,200 to 12,200 ^{1 3}	0.005	0.005	0.005
2,450 to 2,500	0.001		
3,700 to 4,200	0.005		
5,925 to 6,875	0.005		
10,550 to 11,700	0.005		
12,200 to 13,250 ⁶	0.005		
12,200 to 17,700	0.03	0.03	0.03
17,700 to 18,820 ^{4 5}	0.003		
18,820 to 18,920 ^{4 5}	0.001		
18,920 to 19,700 ^{4 5}	0.003		
19,700 to 27,500 ⁶	0.03		
27,500 to 28,350	0.001		
29,100 to 29,250	0.001		
31,000 to 31,075 ⁸	0.001		
31,075 to 31,225 ⁸	0.001		
31,225 to 31,300 ⁸	0.001		
31,300 to 40,000 ⁶	0.03 ⁹	0.03	0.03
71,000 to 76,000	0.03	0.03	0.03
81,000 to 86,000	0.03	0.03	0.03

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§101.109 Bandwidth.

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Frequency band (MHz)	Maximum authorized bandwidth
928 to 929	25 kHz ^{1 5 6}
932 to 932.5, 941 to 941.5	12.5 kHz ^{1 5 6}
932.5 to 935, 941.5 to 944	200 kHz ¹
952 to 960	200 kHz ^{1 5 6}
1,850 to 1,990	10 MHz ¹
2,110 to 2,130	3.5 MHz
2,130 to 2,150	800 or 1600 kHz ¹
2,150 to 2,160	10 MHz
2,160 to 2,180	3.5 MHz
2,180 to 2,200	800 or 1600 kHz ¹
2,450 to 2,483.5	625 kHz ²
2,483.5 to 2,500	800 kHz
3,700 to 4,200	20 MHz
5,925 to 6,425	30 MHz ¹
6,425 to 6,525	25 MHz
6,525 to 6,875	10 MHz ¹
10,550 to 10,680	5 MHz ¹
10,700 to 11,700	40 MHz ¹
12,200 to 12,700	20 MHz ¹
13,200 to 13,250	25 MHz
17,700 to 18,140	220 MHz ¹
18,140 to 18,142	2 MHz
18,142 to 18,580	6 MHz
18,580 to 18,820	20 MHz ¹
18,820 to 18,920	10 MHz
18,920 to 19,160	20 MHz ¹
19,160 to 19,260	10 MHz
19,260 to 19,700	220 MHz ¹
21,200 to 23,600	100 MHz ⁴
24,250-25,250	40 MHz ⁷
27,500 to 28,350	850 MHz
29,100 to 29,250	150 MHz
31,000 to 31,075	75 MHz
31,075 to 31,225	150 MHz
31,225 to 31,300	75 MHz
38,600 to 40,000	50 MHz ⁷
Above 40,000	³
71,000 to 76,000	5000 MHz
81,000 to 86,000	5000 MHz

³ *To be specified in authorization, except where otherwise specified in this chart, e.g., 71,000 to 76,000 MHz and 81,000 to 86,000 MHz.*

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§101.113 Transmitter power limitations.

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Maximum allowable EIRP 1 2

Frequency Band (MHz)	Fixed (dBW)	Mobile (dBW)
928.0 to 929.0	+17	
932.0 to 932.5	+17	
932.5 to 935.0	+40	
941.0 to 941.5	+30	
941.5 to 944.0	+40	
952.0 to 960.0 2	+40	
1,850 to 1,990	+45	
2,110 to 2,150	+45	
2,150 to 2,180 3	+45	
2,180 to 2,200	+45	
2,450 to 2,500	+45	
2,500 to 2,686		
2,686 to 2,690	+45	
3,700 to 4,200	+55	
5,925 to 6,425	+55	
6,425 to 6,525		+35
6,525 to 6,875	+55	
10,550 to 10,680 5	+55	
10,700 to 11,700	+55	
12,200 to 12,700	+50	
12,700 to 13,250 4	+50	
14,200 to 14,400	+45	
17,700 to 18,600	+55	
18,600 to 18,800 6	+35	
18,800 to 19,700	+55 5	
21,200 to 23,600 10	+55	
24,250 to 25,250	+55 5	
27,500 to 28,350 9	+55	
29,100 to 29,250	7	
31,000 to 31,075 8 9	30 dBW/MHz	30 dBW/MHz
31,075 to 31,225 8 9	30 dBW/MHz	30 dBW/MHz
31,225 to 31,300 8 9	30 dBW/MHz	30 dBW/MHz
38,600 to 40,000	+55	
<i>71,000 to 76,000</i>	+55	
<i>81,000 to 86,000</i>	+55	

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§101.115 Directional antennas.

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ANTENNA STANDARDS

Frequency (MHz)	Category	Maximum beamwidth to 3dB points ¹ (included angle in degrees)	Minimum antenna gain (dbi)	Minimum radiation suppression to angle in degrees from center-line of main beam in decibels						
				5° to 10°	10° to 15°	15° to 20°	20° to 30°	30° to 100°	100° to 140°	140° to 180°
932.5 to 935	A	14.0	n/a	n/a	6	11	14	17	20	24
	B	20.0	n/a	n/a	n/a	6	10	13	15	20
941.5 to 944	A	14.0	n/a	n/a	6	11	14	17	20	24
	B	20.0	n/a	n/a	n/a	6	10	13	15	20
952 to 960 ^{2, 3}	A	14.0	n/a	n/a	6	11	14	17	20	24
	B	20.0	n/a	n/a	n/a	6	10	13	15	20
1,850 to 2,500 ⁴	A	5.0	n/a	12	18	22	25	29	33	39
	B	8.0	n/a	5	18	20	20	25	28	36
3,700 to 4,200	A	2.7	36	23	29	33	36	42	55	55
	B	2.7	36	20	24	28	32	32	32	32
5,925 to 6,425 ⁵	A	2.2	.38	25	29	33	36	42	55	55
	B	2.2	38	21	25	29	32	35	39	45
5,925 to 6,425 ⁶	A	2.2	38	25	29	33	36	42	55	55
	B	2.2	38	20	24	28	32	35	36	36
6,525 to 6,875 ⁵	A	2.2	38	25	29	33	36	42	55	55
	B	2.2	38	21	25	29	32	35	39	45
6,525 to 6,875 ⁶	A	1.5	n/a	26	29	32	34	38	41	49
	B	2.0	n/a	21	25	29	32	35	39	45
10,550 to 10,680 ^{5, 7}	A	2.2	38	25	29	33	36	42	55	55
	B	2.2	38	20	24	28	32	35	35	39
10,550 to 10,680 ⁶	A	3.4	34	20	24	28	32	35	55	55
	B	3.4	34	20	24	28	32	35	35	39
10, 565 to 10,615	n/a	360	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
10,630 to 10,680 ⁸	n/a	3.5	34	20	24	28	32	35	36	36
10,700 to 11,700 ⁵	A	2.2	38	25	29	33	36	42	55	55
	B	2.2	38	20	24	28	32	35	36	36
12,200 to 13,250 ⁹	A	1.0	n/a	23	28	35	39	41	42	50
	B	2.0	n/a	20	25	28	30	32	37	47
17,700 to 18,820	A	2.2	38	25	29	33	36	42	55	55
	B	2.2	38	20	24	28	32	35	36	36
18,920 to 19,700 ¹⁰	A	2.2	38	25	29	33	36	42	55	55
	B	2.2	38	20	24	28	32	35	36	36
21,200 to 23,600 ¹¹	A	2.2	38	25	29	33	36	42	55	55
	B	2.2	38	20	24	28	32	35	36	36

Frequency (MHz)	Category	Maximum beamwidth to 3dB points ¹ (included angle in degrees)	Minimum antenna gain (dbi)	Minimum radiation suppression to angle in degrees from center-line of main beam in decibels						
				5° to 10°	10° to 15°	15° to 20°	20° to 30°	30° to 100°	100° to 140°	140° to 180°
24,250 to 25,250 ¹⁰	A	2.2	38	25	29	33	36	42	55	55
	B	2.2	38	20	24	28	32	35	36	36
31,000 to 31,300 ^{12, 13}	n/a	4.0	38	n/a	n/a	n/a	n/a	n/a	n/a	n/a
38,600 to 40,000 ¹⁴	A	n/a	38	25	29	33	36	42	55	55
	B	n/a	38	20	24	28	32	35	36	36
<i>71,000 to 76,000</i>	<i>A</i>	<i>0.6</i>	<i>50</i>	<i>29</i>	<i>33</i>	<i>36</i>	<i>42</i>	<i>45</i>	<i>55</i>	<i>60</i>
	<i>B</i>	<i>0.6</i>	<i>50</i>	<i>29</i>	<i>33</i>	<i>36</i>	<i>42</i>	<i>45</i>	<i>55</i>	<i>60</i>
<i>81,000 to 86,000</i>	<i>A</i>	<i>0.6</i>	<i>50</i>	<i>29</i>	<i>33</i>	<i>36</i>	<i>42</i>	<i>45</i>	<i>55</i>	<i>60</i>
	<i>B</i>	<i>0.6</i>	<i>50</i>	<i>29</i>	<i>33</i>	<i>36</i>	<i>42</i>	<i>45</i>	<i>55</i>	<i>60</i>

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§101.147 Frequency assignments.

(a) Frequencies in the following bands are available for assignment for fixed microwave services.

928.0-929.0 MHz	(28)
932.0-932.5 MHz	(27)
932.5-935 MHz	(17)
941.0-941.5 MHz	(27)
941.5-944 MHz	(17) (18)
952.0-960.0 MHz	(28)
1,850-1,990 MHz	(20)
2,110-2,130 MHz	(1) (3) (7) (20) (23)
2,130-2,150 MHz	(20) (22)
2,150-2,160 MHz	(22) (29)
2,160-2,180 MHz	(1) (2) (20) (23)
2,180-2,200 MHz	(20) (22)
2,450-2,500 MHz	(4)
2,650-2,690 MHz	
3,700-4,200 MHz	(8) (14) (25)
5,925-6,425 MHz	(6) (14) (25)
6,425-6,525 MHz	(24)
6,525-6,875 MHz	(14)
10,550-10,680 MHz	(19)
10,700-11,700 MHz	(8) (9) (19) (25)
11,700-12,200 MHz	(24)
12,200-12,700 MHz	(22)
12,700-13,200 MHz	(22)
13,200-13,250 MHz	(4) (24) (25)
14,200-14,400 MHz	(24)
17,700-18,300 MHz	(10) (15)

18,300-18,580 MHz	(5) (10) (15)
18,580-19,300 MHz	(22) (30)
19,300-19,700 MHz	(5) (10) (15)
21,200-22,000 MHz	(4) (11) (12) (13) (24) (25) (26)
22,000-23,600 MHz	(4) (11) (12) (24) (25) (26)
24,250-25,250 MHz	
27,500-28,350 MHz	(16)
29,100-29,250 MHz	(5) (16)
31,000-31,300 MHz	(16)
38,600-40,000 MHz	(4)
Bands Above 40,000 MHz	(31)
71,000-76,000 MHz	(4)(5)(11)(19)
81,000-86,000 MHz	(4)(5)(11)(19)

NOTES

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(31) Except for the 71,000-76,000 MHz and 81,000-86,000 MHz bands.

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(z) 71,000-76,000 MHz; 81,000-86,000 MHz: Fixed. 5,000 MHz authorized bandwidth. Paired and unpaired operations permitted. Stations operating in these bands are licensed on a link-by-link basis, based on latitude, longitude, and elevation. Licensees may use any part or all of the bandwidth in these channels.

* * * * *

Certificate of Service

I, Courtenay P. Adams, hereby certify that I have caused a copy of the foregoing Petition for Rulemaking to be delivered, by hand, this 7th day of September 2001, to the following individuals:

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** Denotes service by U.S. mail, postage prepaid.